

**U.S. EPA REMOVAL ACTION  
JARD COMPANY SITE, BENNINGTON, VT  
TDD No. 01-06-08-0003**

**SCOPE OF WORK/WORK PLAN  
For  
SOIL CAP DESIGN AND RELATED ENGINEERING SERVICES  
BY  
REGION 1 START III SPECIALIZED LABOR STAFF**

**12 December 2006  
Revision No. 1 – 19 February 2007**

U.S. EPA has requested the Weston Solutions, Inc. (WESTON®) Region 1 Superfund Technical Assessment and Response Team III (START III) to design a soil cap to cover contaminated portions of the Jard Company, Inc. site (the site), located in Bennington, Vermont. The cap design and associated engineering support services will be provided by Specialized Labor staff based primarily in WESTON's Manchester, New Hampshire office (MNH), and other offices as needed to accomplish this task.

The following presents WESTON's understanding of the site and the proposed work to be performed by Specialized Labor. This is a preliminary work plan and forms the basis of the accompanying level of effort (LOE) estimate.

[Revision No. 1 Note: This revision reflects a more limited scope of work for the Specialized Labor Staff based on direction received from EPA during a 13 February 2007 conference call. Deleted text is marked with strikeout. New text is marked with underline.]

### **Site Understanding**

The site is located at 126 Bowen Road in Bennington, Vermont. The site encompasses approximately 36.16 acres and includes a 120,000 square foot vacant building; paved parking, grassy, and lightly wooded areas within a security fence; and a larger undeveloped wooded area outside of the security fence extending south to the Roaring Branch of the Walloomsac River and west to adjacent properties. WESTON anticipates that an approximate 3.5 acre area, including the 120,000 square foot building footprint, will be covered by the soil cap. EPA will identify to Weston in writing the areas of the site subject to capping, e.g., site map with highlighted areas.

The site was the location of a former electrical components manufacturer. High levels of polychlorinated biphenyls (PCBs) are located in the soil outside and beneath the building, in the concrete slab of portions of the building, and on the steels walls of the building.

As presented by the On-Scene Coordinator (OSC), EPA plans to demolish the building, disposing of contaminated components of the building at appropriate off-site waste disposal areas. "Hot spots" of PCB contaminated soils will be excavated and disposed of off-site. EPA anticipates that soils and possibly concrete slabs with lower but actionable levels of PCB contamination will remain on site. To address the potential hazard of these remaining materials to human and environmental contact, the OSC has proposed the construction of a soil cap over significant portions of the site (assumed to be the building footprint and portions of adjacent

developed areas). EPA will identify to Weston in writing the areas of the site subject to capping, e.g., site map with highlighted areas.

Specialized Labor will be utilized to design a cap to be constructed over the contaminated area designated by the OSC. The demolition, soil removal, and cap construction work is assumed to be performed by EPA's Emergency Rapid Response Service (ERRS) contractor under an established contract. Proposed work by Specialized Labor staff is focused on developing the conceptual cap design and development of drawings and specifications that EPA may use to define the capping work for ERRS or construction contractor implementation. In addition, limited Specialized Labor assistance is proposed during the implementation phase of the cap. The proposed Specialized Labor work does not include efforts to identify hot spots, address building demolition, or support removal action activities other than the cap construction as defined herein. It is understood that the cap design will be limited to a single cap composition of soil fill and geotextile. Multiple capping options will not be developed for consideration. The cap will not include elements of low permeability, subsurface drainage, specialty geosynthetics, or slope reinforcement.

### **Task 00 – Project Initiation and Work Plan/Cost Estimate Development**

This task includes the initiation of the project for Specialized Labor support including an initial site visit and kick-off meeting with the OSC and dedicated START staff.

This task also includes the development of this initial work plan and associated LOE estimate. No effort has been included in this task as part of this initial work plan/cost estimate as the necessary effort has been authorized under a prior request.

As the project progresses, amended work plans and estimates may be prepared under this task. Further work under this task will only be implemented with the authorization of EPA including additional Specialized Labor funding. Through Revision No. 1, EPA has authorized an additional 6.5 hours of Civil Engineer Specialized Labor, i.e., Senior Engineer, for the work plan and cost estimate revision. This approved funding is not contained in this cost estimate but will be addressed separately in a TDD amendment.

### **Task 20 – Pre-Design Investigations**

This task will include preparatory research, review, and initiation of field investigations necessary to gain additional understanding of the characteristics of the site property and environs. This work is necessary to identify and understand the potential constraints on the proposed site actions.

Specialized Labor staff will review existing, available documents developed for the site under START to develop a familiarity with the site history and past investigations.

~~A recommended scope of work will be prepared for EPA to obtain a topographic and partial boundary survey from a licensed land surveyor. A Specialized Labor engineer will attend an on-site surveyor pre-bid meeting to clarify survey needs for the subsequent design activities. This task also will include review of final survey deliverables and an opinion to EPA on the successful completion of the task. One engineer for 1 day on site including partial per diem and round-trip mileage from Manchester, New Hampshire was estimated for this effort.~~

It is assumed that subsurface conditions information has been developed as part of past investigations, including soil characteristics and variability, blow counts, groundwater levels and variability, and other geotechnical information, and will be available for this assignment. This information may be supplemented by data gathered during anticipated hot spot soil removal activities. It is further assumed that additional investigatory excavations (test pits) will be performed by EPA/ERRS upon request by START personnel in conjunction with the hot spot removal. In addition, it is assumed that on-site observation of such excavations will be made by qualified personnel from the dedicated START staff and no on-site effort has been estimated for Specialized Labor staff to conduct this work.

Because stormwater discharge is a critical issue for projects involving significant land grading and caps, this task also includes limited effort by Specialized Labor to investigate potential discharge points for site stormwater. This work will include communication with municipal and state agencies to determine location and capacity of nearby existing stormwater conveyances. For cost estimating purposes, it is assumed that field investigation associated with the stormwater discharge will not be necessary ~~will be combined with the survey pre-bid meeting visit.~~

#### **Task 40 – Concept Design**

This task will include activities necessary to establish the engineering parameters and criteria for the design of a soil cap, issuing this information in the form of a basis of design, developing a conceptual design of the cap, and providing assistance to EPA via conference call support only in obtaining approval/concurrence of the concept.

~~The Specialized Labor staff will work with data developed previously under START and by others to assist the OSC with finalizing the appropriate limit of the soil cap.~~

Once the base survey and cap limits are established by EPA, the concept design will proceed. Included in the cost estimate for concept design is preparation of a basis of design document summarizing the design criteria and requirements of the finished project as well as the features and major materials that will be specified. The document will consist of lists and bullet items with no extended narrative or background information. This will include effort by a Specialized Labor geotechnical engineer. Also included will be preliminary sketches ~~drawings~~ for the work, including plans, sections, and details. Sketches are intended as illustrative aids for discussion and are not intended for definitive documentation. This document will be furnished to the OSC and applicable agencies (to be determined) for concurrence with the design concept. For cost estimating purposes, up to 2 sheets ~~4 sheets~~ will be developed to a preliminary sketch stage as part of the concept design engineering.

Also included in the concept design is effort to research and identify applicable regulations and guidance for the site and design of the proposed actions.

Specialized Labor staff may need to perform at least one site visit as the concept design is developed to verify conditions, to fully understand areas of the site and proposed actions that require special attention, and to lay-out key elements in the design to confirm their workability. It is estimated that one engineer ~~and one designer~~ will be on site for one day (Travel includes partial per diem and mileage from MNH).

In addition, it is estimated that one engineer will participate in a conference call (e.g., discussion) ~~attend a site meeting~~ to assist the OSC with obtaining concurrence with the proposed concept from applicable agencies (~~Travel includes one trip with mileage from MNH to the site~~). Included in this task is the effort associated with preparation for the discussion meetings, documentation of the discussion meeting, and limited follow-up communications resulting from the discussion meeting. The Discussion for Concurrence and Miscellaneous Communication and Documentation tasks do not fall under the definition of design. These are general office consulting functions only, if needed, to support EPA.

## **Task 50 – Final Design**

This task is generally to perform final design for the selected action, producing construction documents for use by EPA consistent with the approved basis of design and concept design.

The task will include performing the necessary engineering calculations, finalizing drawings and specifications ~~prepared in the concept design task~~ and preparing the additional detail drawings and specifications necessary for a complete package. Specialized Labor effort is included to discuss the design documentation and the construction schedule with EPA and the ERRS contractor, and for miscellaneous and follow-up communication to document design documentation discussions. The Miscellaneous Communication and Documentation task does not fall under the definition of design. This is a general office consulting function only, if needed, to support EPA.

The Specialized Labor Scope of Work is further defined by the following conditions:

- The construction document deliverable will be comprised of ~~a technical specification book and accompanying~~ technical specifications and drawings on 22 x 34 inch sheets (12 sets including one unbound original to be issued);
- Detail, scope, and formality of the drawings will be limited to the minimum necessary to present the intended construction approach. This will require effort by the construction contractor to interpret the drawing information for construction.
- Detail, scope, and formality of the specifications will be limited to notes and bullet items of key requirements and material specifications listed on the drawings or as a separate text document. Specifications will not be a separate book of detailed, comprehensive specifications in CSI, three-part format.
- No contracting “front end” such as bid sheets, general requirements, bond requirements will be prepared by WESTON START;
- It is assumed that subsurface soil conditions, ledge depth, and groundwater levels are consistent over the work area that no further geotechnical exploration will be necessary;
- Any wetlands or natural resource delineation (if necessary) is not included;
- Any boundary survey, document preparation, negotiation, or other legal assistance associated with easement acquisition will be by others; and

- Permission to access private property for field verification and design tasks will be secured by others.

## **Task 60 – Construction Phase Support**

This task includes the effort associated with providing limited Specialized Labor engineering support to the EPA during construction activities to implement the selected action. This effort is to assist the EPA with ensuring the contractor performs the work in a manner consistent with the design intent and specified quality, and to both anticipate and to respond to questions and problems encountered during the construction.

The effort for this task entails one engineer from MNH attending ~~both the pre-bid meeting and the pre-construction meeting at the site~~ to enhance contractor understanding of the design intent through on-site communications. Also included is an allowance for engineering support from the office for contractor questions, a submittal review, and miscellaneous communications.

WESTON recommends an experienced engineer be present on-site during the construction period to monitor construction and quality performance of the contractor. It is anticipated that qualified personnel from the dedicated START staff will provide that service and that effort is not included in this WP/CE for Specialized Labor. ~~The cost estimate includes two single day construction phase visits by the Specialized Labor senior design engineer to inspect the construction and provide on site consultation (Travel budget assumes two visits, including 2 days of partial per diem and mileage for two round trips between MNH and the site).~~ Effort is ~~also~~ included for miscellaneous communications between the team members, the OSC, and other parties, and project close out including a final on-site inspection visit and archiving documents ~~minor drawing revisions~~. The final site inspection includes round-trip mileage and partial per diem for the engineer.

It should be noted that the duration of construction activities is outside the control of WESTON and can be influenced by the construction contractor's staffing, production rates, conditions encountered, and weather. In addition, the level of quality initially provided by the construction contractor may be less than desired requiring greater effort by WESTON to ensure compliance with the design. As such, there is a level of uncertainty in the level of effort necessary to provide construction phase services. If it is determined that additional effort will be necessary during this phase, WESTON will notify the OSC and will develop an amendment to this Work Plan and accompanying level-of-effort estimate.

## **Task 94 – Clerical Support**

Support activities undertaken by Specialized Labor clerical staff will be tracked to this task. These activities include specification preparation, correspondence, filing, coordinating photo developing, printing, and shipping, and similar clerical tasks in direct support of work for this site.

## **Work by Dedicated START Staff**

By nature of familiarity with the site and EPA requirements, dedicated involvement with EPA projects, and availability and cost efficiency, it is prudent to involve START team members in some of the engineering tasks to be undertaken by Specialized Labor personnel. Specifically, it is

assumed that dedicated START staff will perform the following tasks (and such effort is NOT included in the Specialized Labor cost estimate):

- Conduct project management and project administration duties.
- Maintain primary contact with the EPA OSC.
- Supply Specialized Labor staff with copies of pertinent reports and mapping of the site from the site file.
- Participate in cap design project meetings with EPA and other parties to maintain continuity of information and to document activities for the file.
- Perform site visits with Specialized Labor staff to provide health and safety oversight and monitoring.
- Coordinate soil boring and monitor well installation, site sampling and reporting activities as needed.
- Procure any necessary subcontractors and significant materials/supplies.
- Provide additional research and support as identified.

## **Summary of Work Tasks**

### **INITIATION & WORK PLAN/COST ESTIMATE**

Task Already Completed

#### **PRE-DESIGN INVESTIGATIONS**

Review Site Investigation Documents

~~Identify Land Survey Needs~~

~~Pre Bid Visit for Land Survey~~

Review Land Survey Product (by others)

Review Test Pit Information

Identify Stormwater Conveyances

#### **CONCEPT DESIGN**

~~Finalize Area of Concern~~

Identify Applicable Regs & Guidance

Establish Basis of Design

Develop Cap Cross Sections

Develop Stormwater Management Approach

Prepare Concept Sketches

Site Visit/Field Check

~~Interaction with Regulators~~

Issue Concept Design for Concurrence

~~Site Meeting Discussion~~ for Concurrence

Miscellaneous Communications & Documentation

**FINAL DESIGN**

Engineering Research & Calculation  
Preparation of Drawings  
Preparation of Specifications  
Scope, Schedule, and Design Discussions  
Quality Control  
Final Revisions and Issue  
Miscellaneous Communications & Documentation

**CONST. PHASE SUPPORT**

~~Bidding~~ Pre-Construction Questions  
~~Pre Bid Meeting~~  
~~Pre Award Review~~  
Pre Construction Meeting  
Submittal Review  
~~On Site Observation (2 Visits)~~  
Questions During Construction  
Miscellaneous Communications  
Project Closeout  
Contingencies

**MANAGEMENT**

Clerical Support